

## Abstract

A modem for symmetric bi-directional transporting of an Ethernet signal, comprises a port connected to a physical layer module adapted to receive and transmit a single Ethernet signal, a data splitter for splitting the Ethernet signal into the configurable number of downstream data signals, another port comprising the configurable number of DSL ports coupled to the data splitter. Each port is adapted to transmit a separate downstream signal. Each transmitted downstream signal is transmitted via a corresponding telephone line connected to the port. Each port is further adapted to receive a separate upstream signal. Each received upstream signal is received over the corresponding telephone line connected to the DSL port, and a data collection and reorganization unit coupled to the DSL ports and adapted to assemble the upstream signals into the single Ethernet signal for transmission by the physical layer module.